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**MEMORANDUM**

**PDS-C 31-2021**

**Subject: Niagara Climate Modeling Project Update**

**Date: Wednesday, June 16, 2021**

**To: Planning and Economic Development Committee**

**From: Katie Young, Planner**

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The purpose of this memo is to update Committee on the progress of the Niagara Climate Modeling and Projections Project being undertaken by the Region's consultant, Ontario Climate Consortium ("OCC").

At the May 12<sup>th</sup>, 2021 Planning and Economic Development Committee, staff presented the Niagara Official Plan Consolidated Policy Report (PDS 17-2021), which included an overview of the Climate Change Work Program for the Niagara Official Plan ("NOP").

The outcome of the Climate Change project is to receive climate data that will provide critical information with respect to Niagara's changing climate between 2021-2050 and 2051-2080. The future time periods were selected to align with the planning horizon of 2051 for the NOP. This data will inform future policy decisions at the Region, local municipalities, and the Niagara Peninsula Conservation Authority.

As shared through Appendix 8.1 and 8.2 of PDS 17-2021, the Niagara Climate Modeling and Projections project commenced in February 2021 with a kick-off meeting held with the project team at the beginning of March 2021. The OCC is the technical lead on the project, with Regional staff as project partner and implementation support. The NPCA were engaged for the project and are participating as project partners.

The project team held a Climate Modeling Working Session on April 9, 2021 to confirm the methodology and climate parameters to be used for the study. Local municipalities and agencies were invited to participate in this session.

Attendance included local municipal planning staff and climate change coordinators, Niagara Parks planning staff, NPCA staff, Regional planning staff and the NOP Climate Change Working Group, including staff from Public Health & Emergency Services,

## Economic Development, Waste Management, and Construction Energy & Facilities Management.

There were over 40 climate parameters provided for discussion at the session. A sample of these parameters are:

- Temperature parameters (maximum, minimum, and mean air temperature in degrees Celsius);
- Extreme heat parameters (days above 25°C, 30°C, and 35°C);
- Extreme cold parameters (days below 0°C, -5°C, -10°C, -20°C);
- Precipitation parameters (total annual precipitation in mm/year, seasonal precipitation in mm/season);
- Extreme precipitation parameters (maximum precipitation in one day, days with more than 25mm of precipitation);
- Drought parameters (total annual dry days, maximum total consecutive dry days);
- Agricultural parameters (growing degree days in degrees Celsius, growing season length, growing season start and end dates); and
- Ice parameters (freeze-thaw cycles, ice potential).

The project team also met with staff from Brock University, leading the Niagara Adapts partnership in May 2021. The purpose of the meeting was to understand project scope, similarities, and gaps between Niagara Adapts corporate adaptation planning work and the Region's climate modeling project. An overview of similarities and differences between the projects will be included in the final climate projections report (timing set out below).

The OCC is currently undertaking the historical and future climate change analysis, set to finish at the end of June 2021. In July 2021, preliminary results will be presented to staff for comment and feedback.

The project is expected to finish in October 2021. It will set the basis for specific NOP climate change policy. Other deliverables include:

- a climate projections report, which includes a detailed methodology, analysis of climate projections and its impact on various economic sectors;
- climate variable mapping which is categorized into Niagara north, central, and south as climatic conditions vary in these geographies; and
- training sessions for staff to effectively understand and integrate the above-referenced knowledge and data into future Regional Climate Change Planning projects, strategies and initiatives.

Respectfully submitted and signed by

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Katie Young, MSc (PI)  
Planner